NETGEAR

Powerline 500 WiFi Access Point (XWN5001)

User Manual

350 East Plumeria Drive
San Jose, CA 95134
USA

October 2012
202-11003-01
v1.0

Support

Thank you for choosing NETGEAR.

After installing your device, locate the serial number on the label of your product and use it to register your product at *https://my.netgear.com*. You must register your product before you can use NETGEAR telephone support. NETGEAR recommends registering your product through the NETGEAR website. For product updates and web support, visit *http://support.netgear.com*.

Phone (US & Canada only): 1-888-NETGEAR.

Phone (Other Countries): Check the list of phone numbers at *http://support.netgear.com/general/contact/default.aspx.*

NETGEAR recommends that you use only the official NETGEAR support resources.

Trademarks

NETGEAR, the NETGEAR logo, and Connect with Innovation are trademarks and/or registered trademarks of NETGEAR, Inc. and/or its subsidiaries in the United States and/or other countries. Information is subject to change without notice. NETGEAR, Inc. All rights reserved.

Revision History

Publication Part Number	Version	Publish Date	Comments
202-11003-01	v1.0	October 2012	First publication

Contents

Chapter 1 Getting Started

Hardware Features 6
LED and Feature Descriptions 7
How the Powerline AV 500 Access Point Fits in Your Network 8
Set Up the Powerline Network 10
Set Up a New Powerline Network 10
Add the Access Point to an Existing Powerline Network 11
Set Up the Access Point Wireless Network 12
Method A: Use NETGEAR genie for Wireless Setup 12
Method B: Use the WPS Button for Wireless Setup 15
Join the Access Point Wireless Network 16
Powerline Network Security 16
Use the Security Button to Set the Encryption Key 17

Chapter 2 Using NETGEAR genie

Install NETGEAR genie 20
Powerline Utility Screen 21
Security Icon 22
View the Link Rate between Powerline Devices 23
Change the Name of a Powerline Device 24
Turn LEDs Off or On 25
Set the Powerline Encryption Key 25
Reset a Device to Factory Settings 27
Add a Device to the Powerline Network 28
Wireless Settings 29
Access NETGEAR Web genie 30
Advanced Wireless Settings 32
Upgrade the Firmware 33

Chapter 3 Troubleshooting

This chapter includes: 34
Basic Functioning 35
Troubleshooting Tips 35
LEDs 35
If You Do Not See All Your Devices with the NETGEAR genie 36
If You Do Not See the Powerline Icon on Your Network Map 37
Symantec Endpoint Protection 37

Appendix A Supplemental Information

Technical Specifications 41
Safety Information 42

Appendix B Notification of Compliance

Index

Getting Started

1

This chapter describes your Powerline 500 WiFi Access Point (XWN5001) and how your access point can fit into a home network. It also explains the security features and how to customize the encryption key for added security.

This chapter includes:

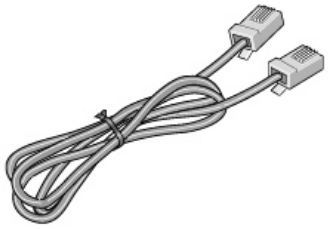
- *Hardware Features*
- *How the Powerline AV 500 Access Point Fits in Your Network*
- *Set Up the Powerline Network*
- *Set Up the Access Point Wireless Network*
- *Join the Access Point Wireless Network*
- *Powerline Network Security*
- *Use the Security Button to Set the Encryption Key*

For more information about the topics covered in this manual, visit the support website at *http://support.netgear.com*.

Hardware Features

The package includes a Powerline 500 WiFi Access Point (XWN5001) and an Ethernet cable.

Powerline 500 WiFi Access Point



Ethernet cable

Figure 1. Package contents

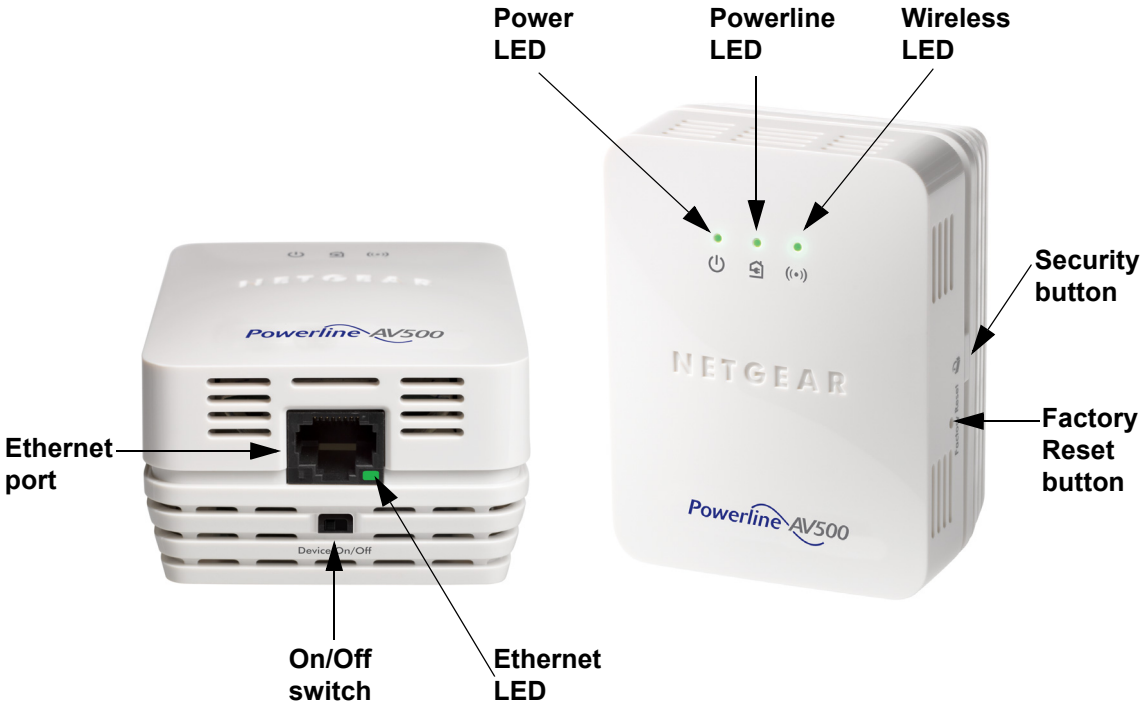


Figure 2. Powerline 500 WiFi Access Point (XWN5001)

LED and Feature Descriptions

Table 1. LED descriptions

<table>
<tr><th>Item</th><th colspan="3">Description</th></tr>
<tr><td>Power LED </td><td colspan="3">• Solid green. The electrical power is on.
• Blinking green. The device is in the process of restarting or setting up security.
• Amber. Power saving mode. The unit enters power saving mode if the Ethernet port is not linked for more than 10 minutes.
• Off. There is no electrical power, or power has been turned off through the NETGEAR genie.</td></tr>
<tr><td rowspan="3">Powerline LED </td><td colspan="3">• Solid. The device is connected to a Powerline network.
• Off. The device has not found any other compatible Powerline devices using the same encryption key or has been turned off through the NETGEAR genie.</td></tr>
<tr><td colspan="3">The Pick A Plug feature lets you pick the electrical outlet with the fastest link rate, indicated by the color displayed by the LED:</td></tr>
<tr><td>Green. Link rate > 80 Mbps (Best)
Good for HD video</td><td>Amber. Link rate > 50 < 80 Mbps (Better)
Good for SD video</td><td>Red. Link rate < 50 Mbps (Good)
Good for data</td></tr>
<tr><td>Wireless LED </td><td colspan="3">• Solid green. The wireless radio is on.
• Off. The wireless radio is off.</td></tr>
<tr><td>Ethernet LED </td><td colspan="3">• Solid green. The device has an active Ethernet connection.
• Off. There is no Ethernet connection.</td></tr>
</table>

Buttons

- **Factory Reset**. Use the Factory Reset button to return your Powerline device to its default factory settings. Press the **Factory Reset** button for 2 seconds, and then release it.
- **Security**. The Security button has the following three functions:
  - Once the Powerline devices are active, you can use the Security button to add encryption to your Powerline network. See *Use the Security Button to Set the Encryption Key* on page 17.
  - You can use the Security button to clone the WiFi network of your wireless router or gateway without typing the network name (SSID) and password. See *Method B: Use the WPS Button for Wireless Setup* on page 15.
  - The Security button provides an easy way (WPS) for your wireless client to join the WiFi network access point. See *Join the Access Point Wireless Network* on page 16.
- **On/Off**. Use the On/Off switch to turn the device on and off.

Ethernet Port

Plug one end of the Ethernet cable that comes with the Powerline 500 WiFi Access Point (XWN5001) into this port and the other end either into your router, or into the computer or another peripheral device.

Product Label

The product label shows unique details specific to your device. The product label is on the back of the device. The label contains the following information.

- Model number
- Powerline MAC address
- Ethernet/wireless MAC address
- Serial number
- Device password
- WPS security PIN
- Default wireless network name (SSID)
- Default network key

How the Powerline AV 500 Access Point Fits in Your Network

You can use one or more Powerline 500 WiFi Access Points to extend your home network anywhere in your house using your electrical power lines.

A Powerline network consists of two or more compatible Powerline devices that communicate with each other. One of the Powerline devices is connected with an Ethernet cable to your router so that the Powerline network is linked to your local area network (LAN). That way each Powerline device can communicate with the router and use its Internet connection.

The following illustration shows an existing Powerline network with one Powerline device in Room 1, a second Powerline device in Room 2, and a Powerline 500 WiFi Access Point (XWN5001) in Room 3:

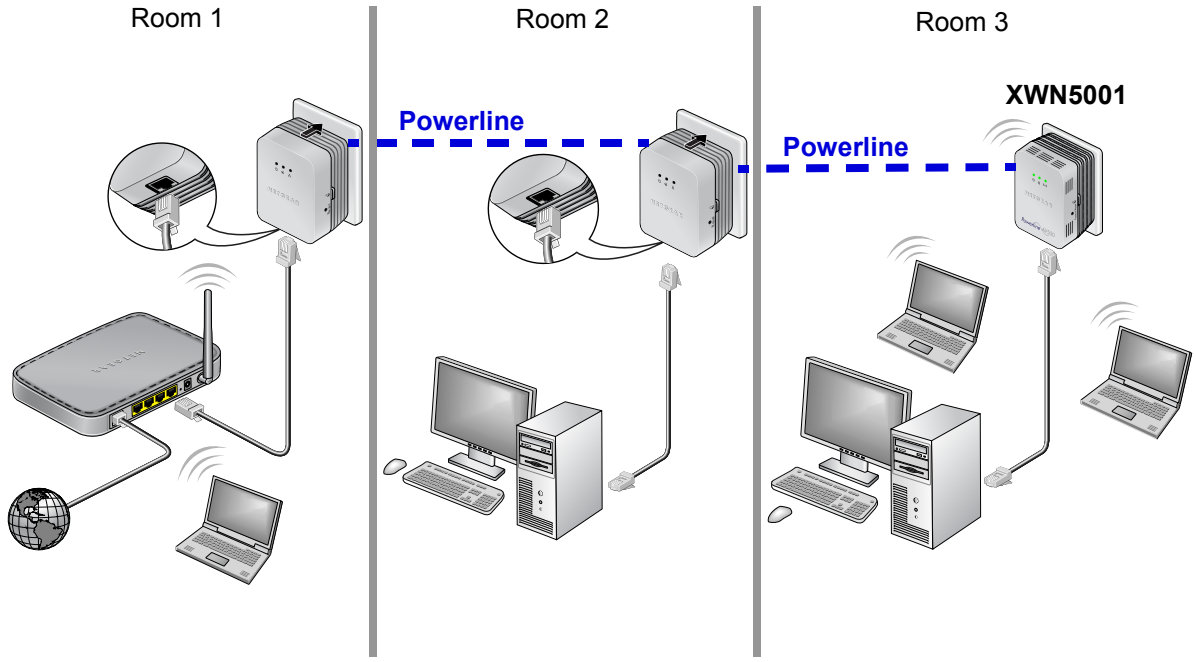
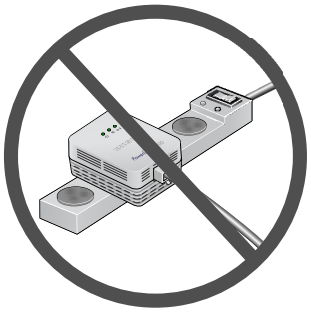


Figure 3. Powerline access point connected to the Powerline network and wireless network

To form a Powerline network you need at least two compatible Powerline devices (including the Powerline 500 WiFi Access Point).

For best performance, plan the location of your Powerline devices:

- Use an electrical outlet that is not controlled by a wall switch to avoid someone unknowingly turning off the power to the outlet.
- Do not plug Powerline products into a power strip, extension cord, or surge protector as this might prevent them from working correctly or reduce the network performance.
- Avoid plugging Powerline products into electrical outlets located near an appliance that uses a lot of power, such as a washer or dryer, or a refrigerator. This could potentially prevent the Powerline devices from working correctly, or reduce network performance.



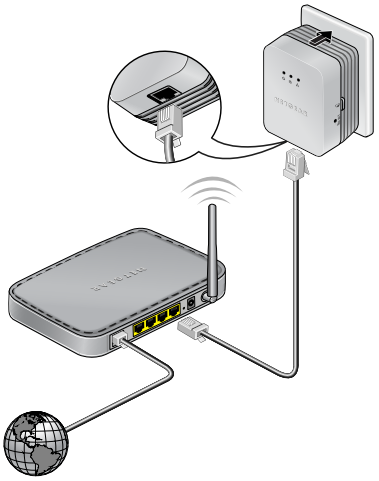
Set Up the Powerline Network

You can set up a Powerline network that includes the access point or you can add the access point to an existing Powerline network.

Set Up a New Powerline Network

Different Powerline models can share the network. All NETGEAR Powerline AV products are compatible.

First device

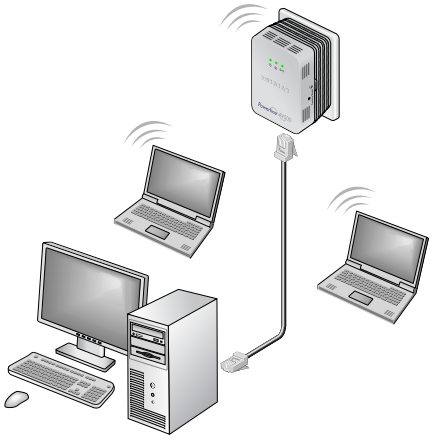


➢ **To set up a new Powerline network:**

1. Make sure that your WiFi router or gateway is connected to the Internet and that your Ethernet wired connections are working.
   a. On a computer that is connected to your router or gateway using an Ethernet cable, open a web browser and navigate to a web page.
   b. On a computer or device that is connected to your wireless network, open a web browser and navigate to a web page.
2. Plug the first Powerline device (sold separately) into a wall outlet near your router or gateway. Then, connect the device to the LAN port on your router or gateway using an Ethernet cable.

   For more detailed instructions, see the installation guide that came in the package.

XWN5001



3. During setup, plug the access point into a wall outlet near your router or gateway.
4. Use the provided Ethernet cable to connect the access point to an Ethernet port on a computer for initial setup.

   The Powerline devices attempt to detect each other and form a Powerline network. This process could take a few minutes.
5. Wait for each Powerline device to be recognized by the Powerline network.

   The Power and Powerline LEDs should light. This process could take as little as 5 seconds, or up to 80 seconds. If the Powerline LEDs are green or amber, the devices are successfully connected. A red LED indicates a slow link rate. In this case, move the device or access point to another electrical outlet with a faster connection.
6. Set up the access point wireless network as explained in *Set Up the Access Point Wireless Network* on page 12.

Add the Access Point to an Existing Powerline Network

If you have an existing Powerline network, make sure one of the Powerline devices is connected to your WiFi router or gateway so that the Powerline network is linked to your local area network (LAN) and WiFi network. Your existing Powerline network must have two or more compatible Powerline devices that communicate with each other.

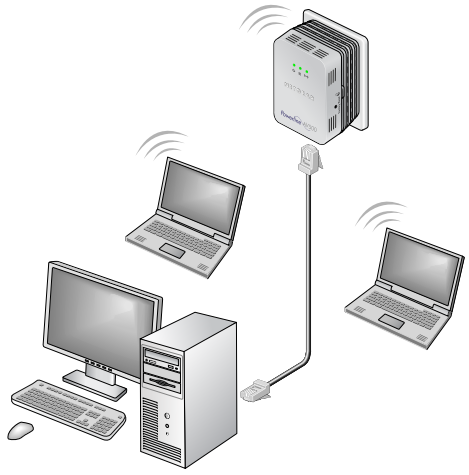
➢ **To add the access point to an existing Powerline network:**

1. If you used the Security buttons or the NETGEAR genie to secure your Powerline network, press the **Reset** button on each Powerline device to return it to its factory settings.

   This is the quickest way to allow your new Powerline 500 WiFi Access Point to communicate with the other Powerline devices.

2. Connect a computer to the access point for initial setup.

   Use the supplied Ethernet cable to connect the access point to an Ethernet port on a computer.



3. For convenience during setup, plug the access point into an electrical outlet near your router.

   The access point attempts to detect the other compatible Powerline devices in your network and join the Powerline network. This process could take a few minutes.

4. Check the Powerline LEDs to make sure that the Powerline devices are communicating with each other. If the LEDs are green or amber, the devices are successfully connected. A red LED indicates a slow link rate. In this case, move the device or access point to another electrical outlet with a faster connection.

5. Set up the access point wireless network as explained in *Set Up the Access Point Wireless Network* on page 12.

Set Up the Access Point Wireless Network

You need to set up the access point so that it can join your wireless network. To do this, you can use either NETGEAR genie or Wi-Fi Protected Setup (WPS).

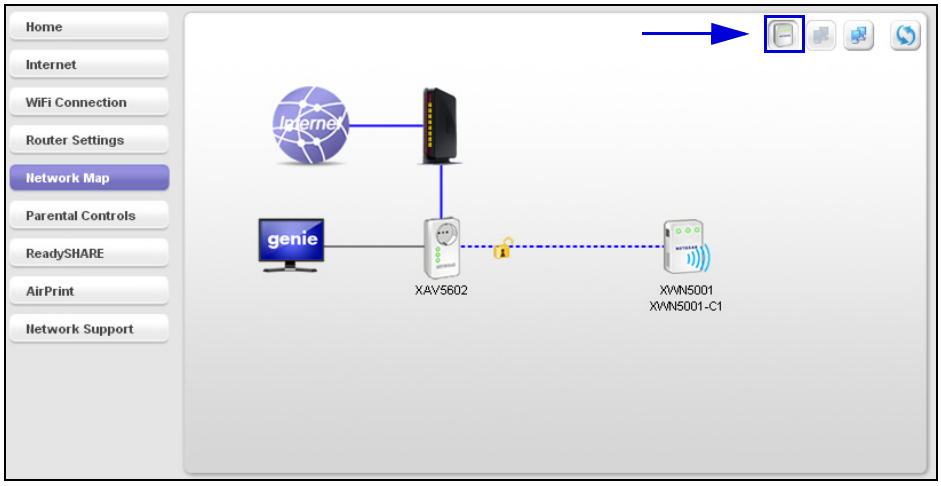
- If your router does not have WPS, or you are not sure, use Method A.
- If your router does have WPS, use Method B.

Method A: Use NETGEAR genie for Wireless Setup

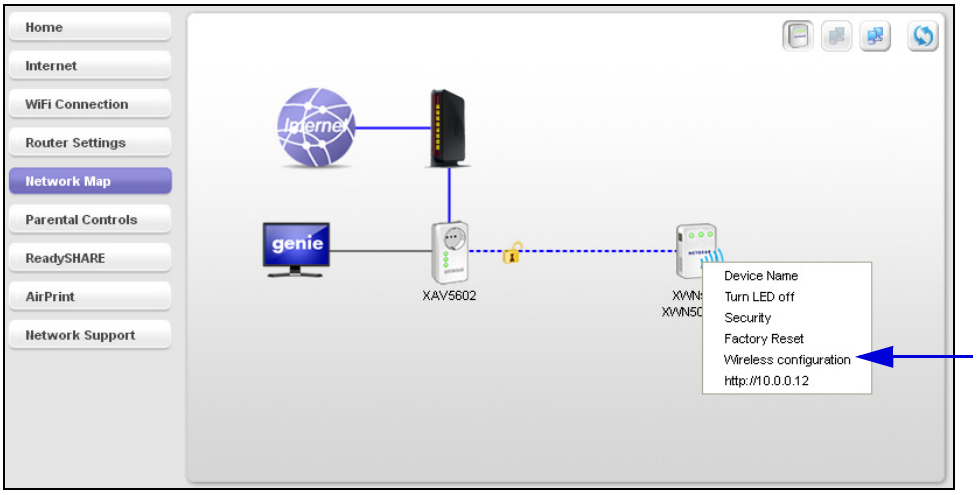
➢ **To use NETGEAR genie to manually configure the wireless settings of your XWN5001:**

1. Download and install NETGEAR genie on your computer. See *Install NETGEAR genie* on page 20.
2. Temporarily connect your computer to the Ethernet port on the XWN5001.
3. Launch NETGEAR genie in one of two ways:
   - Click the NETGEAR genie shortcut icon on your desktop.
   - Select **Start > All Programs > NETGEAR genie**.
4. Click **Network Map** or select it from the list of menu items on the left.

5. Click the Powerline icon on the Network Map screen. The Powerline Utility screen displays.



6. On the Powerline Utility screen, right-click the XWN5001 icon.
7. From the pop-up menu that displays, select **Wireless configuration**.



The following screen displays:

8. Enter the following wireless settings:
   - Wireless Network Name (SSID)
   - Wireless Security Type
   - Passphrase

   If you want to clone your existing wireless network, enter the same wireless settings that your router or gateway uses.

   If you want to create a new WiFi network, enter new wireless settings. Creating a new WiFi network lets you have a second network in another zone of your house.
9. Click **Apply** to save your changes.
10. When you are finished with the wireless settings, disconnect the Ethernet cable from the XWN5001.

Note: You can access advanced wireless settings by right-clicking the device icon and selecting the IP address on the pop-up menu. The login and password are **admin** and **password**.

Method B: Use the WPS Button for Wireless Setup

You can use this method if you have a wireless router, or a modem router with a WPS (Wi-Fi Protected Setup) button. The WPS button might be labeled WPS, or it could look similar to or .

➢ **To use the WPS button on your router or gateway to clone your existing wireless network:**

1. Press and hold the **Security** button on the XWN5001 (about 10 seconds) and release it.

   The Wireless LED starts to blink.

2. Press the **WPS** button on the wireless router or gateway.

   When the Wireless LED stops blinking, the cloning is finalized and the XWN5001 recreates a WiFi access point with the same SSID and password as your router or gateway.

   You now have two WiFi networks with the same parameters (SSID and password). When you are roaming in your house, your wireless client (laptop, tablet, or smartphone) switches from one network (router or gateway) to the other (XWN5001), depending on the signal quality.

Note: This method clones your wireless client and, at the same time, secures the connection with a random password.

Join the Access Point Wireless Network

Use one of these methods to connect other wireless devices (such as a laptop or game console) to your network through the access point.

You can use the WPS button method if you have a wireless device with a WPS (Wi-Fi Protected Setup) button. The WPS button might be labeled WPS, or it could look similar to or .

➢ **To join the wireless network using a WPS button:**

1. Press the **WPS** button on your wireless computer or device.
2. Press and hold the **Security** button for about 2 seconds and release it. The Wireless LED starts blinking.

   When the Wireless LED stops blinking, the wireless device is securely connected to the XWN5001 access point.

If your wireless device does not have a WPS button, you need to use the software that manages your wireless connections for your wireless device and manually enter the wireless settings to connect to the access point.

➢ **To join the wireless network without a WPS button:**

1. Launch the wireless network application on your wireless client.
2. Look at the displayed WiFi networks.
3. Connect to the WiFi router or gateway with the network SSID.

When you are roaming in your house, you are switched from one network (router or gateway) to the other (XWN5001), depending on the signal quality.

Powerline Network Security

A Powerline network consists of two or more Powerline devices using the same network encryption key. Securing your network is crucial. By encrypting the information you send over the Powerline network, you help to keep it secure from hackers. If you do not set up security on your network, anyone nearby with a Powerline network can potentially use his or her connection to gain access to your network and information you send over the Internet. This is especially relevant in settings such as apartment buildings, office buildings, dorm rooms, and other more populated areas.

You can secure your Powerline network in two ways.

- Use the Security button on the Powerline device to automatically generate a random encryption key. See *Use the Security Button to Set the Encryption Key* on page 17.
- Use the NETGEAR genie to configure your Powerline network with an encryption key that you specify. See *Install NETGEAR genie* on page 20.

Use the Security Button to Set the Encryption Key

Note: A Powerline device can generate a private key only once. If you want to replace a private key, first reset the Powerline devices to their factory settings. To do this either press the **Factory Reset** button for 1 second, then release it, or use the NETGEAR genie factory defaults feature (see *Reset a Device to Factory Settings* on page 27).

You can use the Security button to change the default encryption key and set a private encryption key instead. The default encryption key is HomePlugAV.

➢ **To set the encryption key:**

1. Make sure that all of the Powerline devices that you want to configure are plugged in. Verify that the Power and Powerline LEDs on each device are lit solid green.

CAUTION:

Do not press the Security button on the Powerline device until the Power and Powerline LEDs on each Powerline device in your network are lit solid green. Pressing the Security button too soon can temporarily disable Powerline communication. If this should occur, reset the Powerline device to its factory default settings (press the **Factory Reset** button for 1 second, then release it).

2. Press the **Security** button on the first Powerline device for 2 seconds.
   - The Power LED starts blinking after you release the button.
   - The Powerline device automatically creates a new, randomly generated network encryption key that all other Powerline devices on the network will use.

   At this point, the other Powerline devices in your network cannot communicate with each other.
3. Within 2 minutes of pressing the Security button on the first Powerline device, press the **Security** button on the second Powerline device for 2 seconds. You need to press both Security buttons within 2 minutes.
   - The Power LED starts blinking after you release the button.
   - This process allows the second Powerline device to use the same network encryption key as the first device, so that they can communicate.

   When the Power LEDs stop blinking and the Powerline LEDs are lit solid green, the two devices should be able to communicate.

Note: This process works for only one pair of Powerline devices at a time. If you have more than two Powerline devices, repeat this process for each additional Powerline device to be configured.
The devices retain security settings even if they are unplugged.

Using NETGEAR genie

2

This chapter explains how to install and use NETGEAR genie to manage your Powerline network. NETGEAR genie works with all Powerline products.

You can use NETGEAR genie to access a local Powerline device that is connected to your computer with an Ethernet cable and also to access other Powerline devices on the same network.

You can use NETGEAR genie to:

- Change the name of a Powerline device.
- Turn LEDs on or off.
- Set encryption keys.
- Restore a device to default configuration settings.
- Add a device to the Powerline network.
- Change the wireless settings.
- Access the web genie.

This chapter includes:

- *Install NETGEAR genie*
- *Powerline Utility Screen*
- *View the Link Rate between Powerline Devices*
- *Change the Name of a Powerline Device*
- *Turn LEDs Off or On*
- *Set the Powerline Encryption Key*
- *Reset a Device to Factory Settings*
- *Add a Device to the Powerline Network*
- *Wireless Settings*
- *Access NETGEAR Web genie*
- *Advanced Wireless Settings*
- *Upgrade the Firmware*

Install NETGEAR genie

NETGEAR genie allows you to set your own unique Powerline network encryption key and manage devices on your Powerline network.

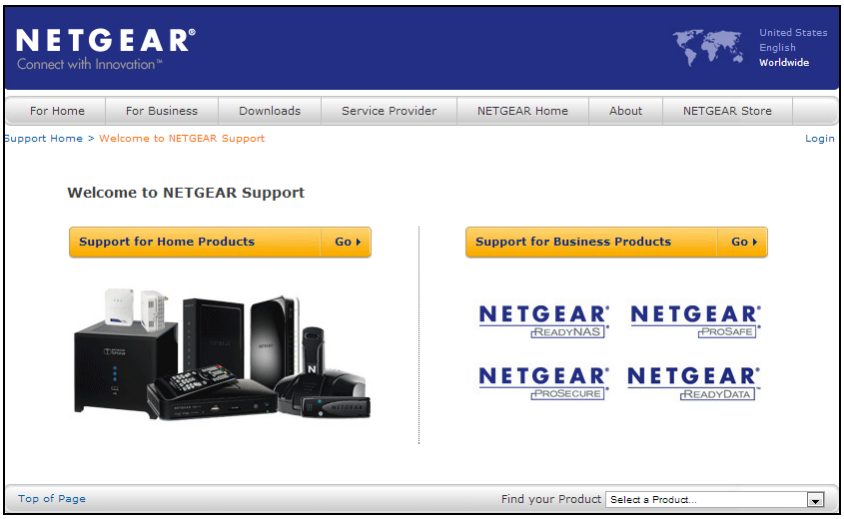
All devices on a Powerline network can be managed from one computer. If you add another Powerline device to a Powerline network, you can install NETGEAR genie on the computer connected locally to the new device, or open the genie on the computer originally used to set up the Powerline network encryption key. You can use any computer to manage the network, but this procedure assumes that you are working from the computer that is connected to a Powerline device.

Note: If you already have NETGEAR genie installed on your computer, you must reinstall the latest version to get support for Powerline products.

NETGEAR genie is a free download available from the NETGEAR website.

➢ **To install NETGEAR genie:**

1. Launch an Internet browser, and visit *http://support.netgear.com.*



2. Click the **For Home** tab.
3. In the search box, type **xau2511** and press **Enter**.
4. Select NETGEAR genie from the downloads list.
5. Click the **Download** button to download NETGEAR genie to your computer.
6. Run the file that you downloaded, and follow the NETGEAR genie setup prompts to install NETGEAR genie. Click **Finish** to complete the setup.

The NETGEAR genie shortcut icon displays on your desktop.

7. Launch NETGEAR genie in one of two ways:
   - Click the NETGEAR genie shortcut icon on your desktop.
   - Select **Start > All Programs > NETGEAR genie**.

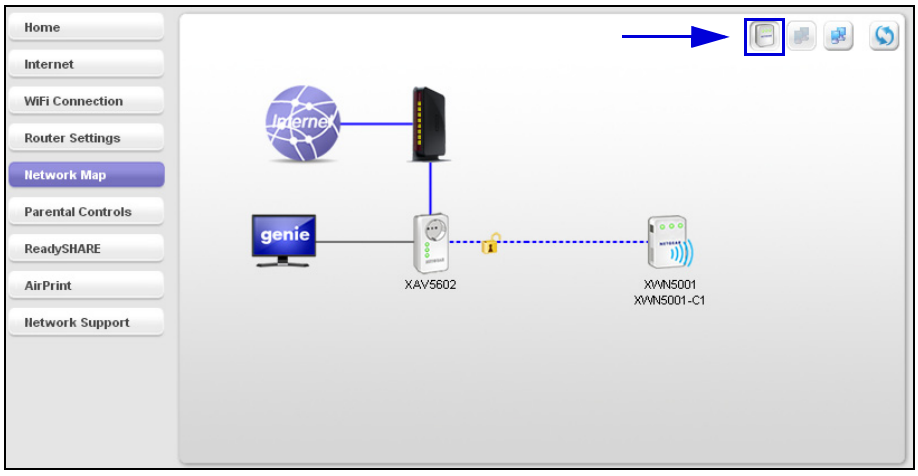
Powerline Utility Screen

The Powerline Utility screen is where you view and manage your Powerline network.

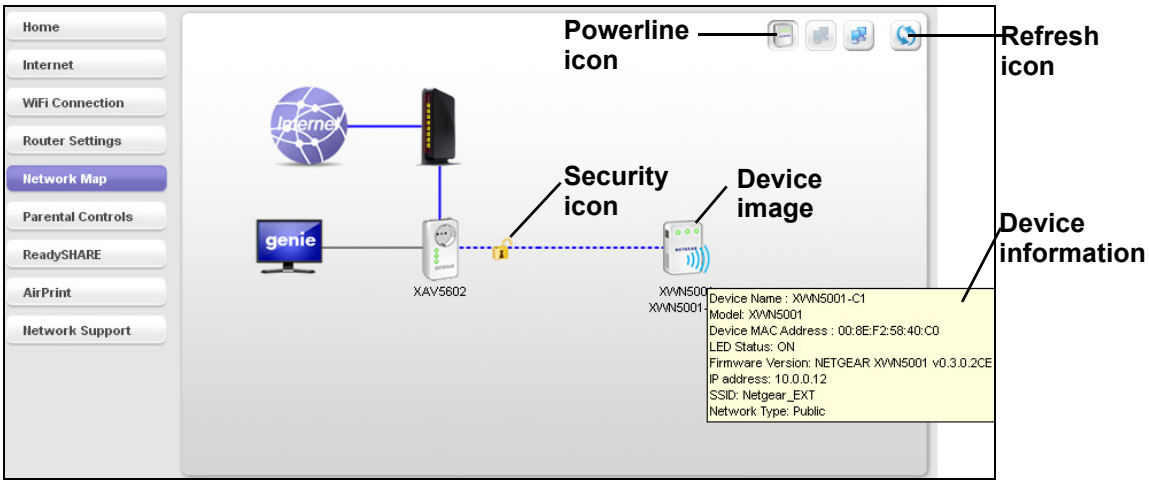
➢ **To navigate to the Powerline Utility screen:**

1. Launch NETGEAR genie.
2. From the NETGEAR genie Home screen, click **Network Map** on the dashboard or select it from the list of menu items on the left.

3. On the Network Map screen, click the Powerline icon to view all the devices in your Powerline network. The Powerline Utility screen displays.



- Click the image of the device that you want to manage.
- If all devices are not shown, click the **Refresh** icon to update the screen.
- Move your mouse over the image of a device to view more information about it.



Security Icon

You can click the Security icon on the Powerline Utility screen to go to the Security screen.

- If the Powerline devices are secured using the default encryption key, the unlocked Security icon displays.

- If the Powerline devices are secured using a private encryption key, the locked Security icon displays.

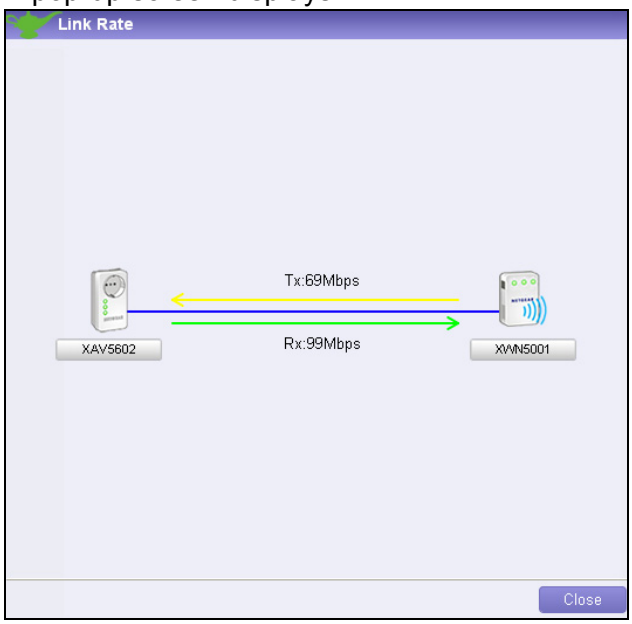
See *Set the Powerline Encryption Key* on page 25 for more information about how to set the encryption key on your Powerline devices.

View the Link Rate between Powerline Devices

➢ **To view the link rate between your Powerline devices:**

On the Powerline Utility screen, click the device whose link rate you want to view.

A pop-up screen displays.



- **Tx**. The rate at which the device is transmitting data.
- **Rx**. The rate at which the device is receiving data.

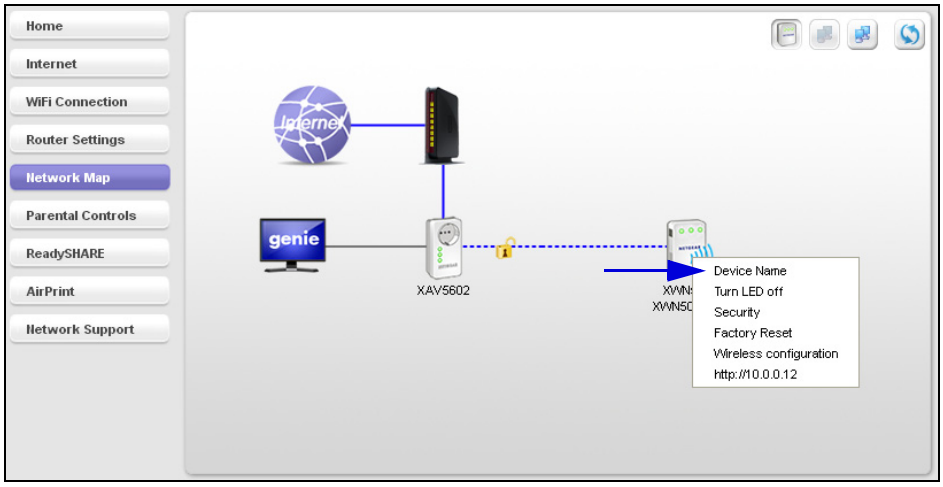
Change the Name of a Powerline Device

Powerline devices are identified by their model number and name. NETGEAR genie detects any Powerline devices that are connected to the network and displays them on the Powerline Utility screen. If you did not name the device, no name appears below the model number on the Powerline Utility screen.

➢ **To name a Powerline device in your Powerline network:**

1. On the Powerline Utility screen, right-click the device you want to name.

   A pop-up menu displays:



2. Select **Device Name**. A pop-up screen displays advising you that connectivity will be temporarily lost while the device is being renamed.

3. Click **OK**. The following screen displays:

4. Enter a new name for the Powerline device, and click **OK**.

Turn LEDs Off or On

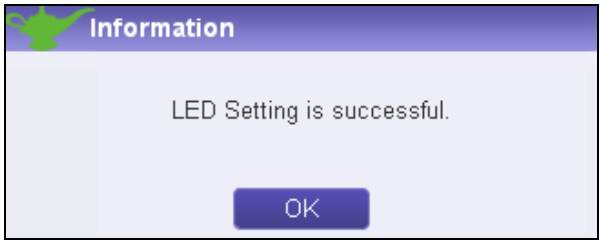
For each device in your Powerline network, you can turn the LEDs off or on.

➢ **To turn the LEDs off or on:**

1. On the Powerline Utility screen, right-click the Powerline device icon.
2. On the pop-up menu, select either **Turn LED off** or **Turn LED on**.

A pop-up screen displays advising you that connectivity will be temporarily lost while the LEDs are being reset.

3. Click **OK**. The genie displays a message indicating that the operation was successful.



Click **OK**.

Set the Powerline Encryption Key

Powerline devices on the same Powerline network must use the same encryption key. The factory default encryption key is HomePlugAV.

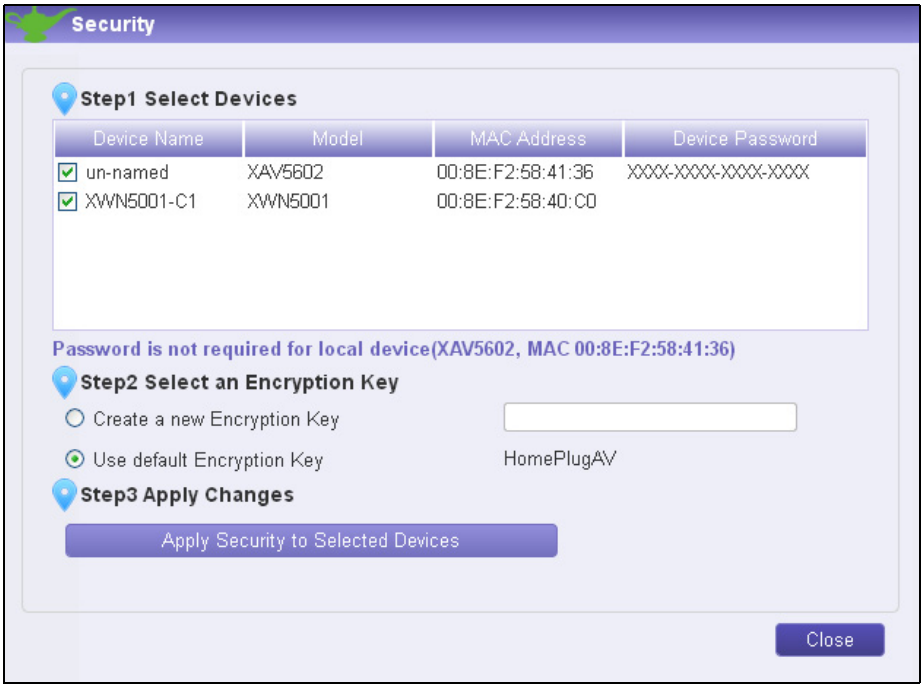
In locations such as apartment buildings or office buildings, others might use the same electrical power lines that you use for your Powerline network. To protect your Powerline network from unwanted access, you can customize the encryption key for your Powerline devices. Make sure that you set up the same encryption key for all of your Powerline devices so that they can communicate with each other.

You use the Security screen in the NETGEAR genie Powerline Utility to set encryption keys. If you customize the encryption key and then forget what it is, you can return your Powerline devices to their factory default Powerline encryption key of HomePlugAV.

➢ **To set the encryption key:**

1. On the Powerline Utility screen, right-click the Powerline device icon or click the Security icon.

   The Security screen displays.



   The top section of the Security screen shows information about each device that NETGEAR genie detects.

   - **Device Name**. This lists the Powerline devices that are detected on the network after the genie completes a scan for devices. The device name is shown as un-named by default, but you can change it to a descriptive name such as Office or Master Bedroom (see *Change the Name of a Powerline Device* on page 24).
   - **Model**. This identifies the model number of the Powerline device.
   - **MAC Address**. The MAC address for the Powerline device. This information is on the product label, which might not be visible when the device is plugged in.
   - **Device Password**. To change settings for a remote Powerline device, you have to enter its password. The device password is on the product label.

2. Select the check box next to each device for which you want to set the encryption key.
3. In Step 2 on your screen, select the option that you want:
   - **Create a new Encryption Key**. To set your own (private) network encryption key, type your network encryption key in the field.
   - **Use default Encryption Key**. When you select this option, the factory default encryption key automatically displays in the field. The default network encryption key is HomePlugAV.

Note: Before you can reset the encryption key for a remote device, you have to enter its password. The password is printed on the product label on the back of the device.

4. Click the **Apply Security to Selected Devices** button.

   When you are finished setting the encryption key, the genie displays a message indicating that the operation was successful.

5. Click **OK**.

Reset a Device to Factory Settings

This option returns the network encryption key to its factory default of HomePlugAV.

Note: If you customized your network encryption key, the local Powerline device is disconnected from the network when you reset it to the factory defaults. To avoid this problem, reset all remote devices before you reset the local device.

➢ **To reset a device to its factory settings:**

1. On the Powerline Utility screen, right-click the Powerline device icon. The pop-up menu displays:

2. Select **Factory Reset**. A pop-up screen displays advising you that connectivity will be temporarily lost while the LEDs are being reset.
3. Click **OK**. A message displays asking you to confirm the reset.
4. Click **OK** to reset the device. A message indicates whether the operation succeeded.

Add a Device to the Powerline Network

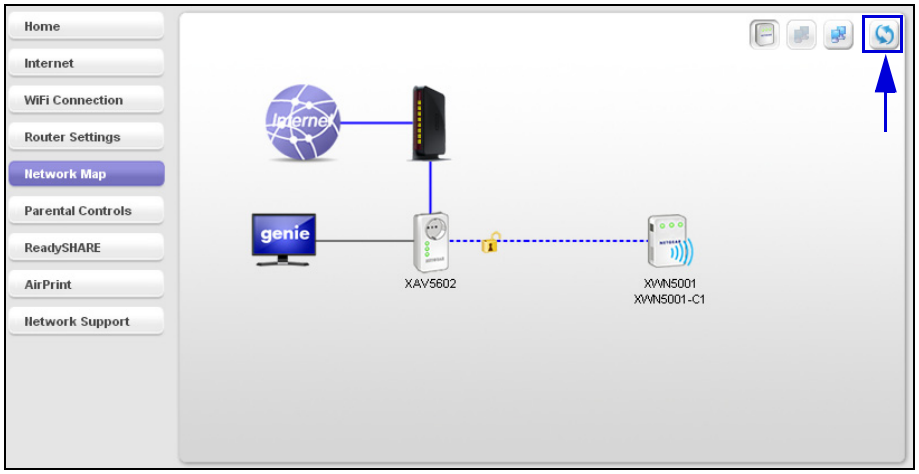
If you are adding a device to a Powerline network, and the network encryption key has been left at its default setting, all you need to do is plug the new device into a power outlet.

If the network encryption key has been customized, there are two ways to set the security:

- You can use the Security button to add the new device to your network. See *Use the Security Button to Set the Encryption Key* on page 17.
- You can use the NETGEAR genie Powerline Utility to add the new device to the network, as described in the following procedure.

➢ **To add a Powerline device to the Powerline network using NETGEAR genie:**

1. Plug the Powerline device into an available AC power outlet.
2. Use the provided Ethernet cable to connect the Powerline device to an Ethernet port on the computer.
3. On the Powerline Utility screen, click the **Refresh** icon. Wait for NETGEAR genie to detect the new device.



4. Right-click the device, and select **Security** from the menu.

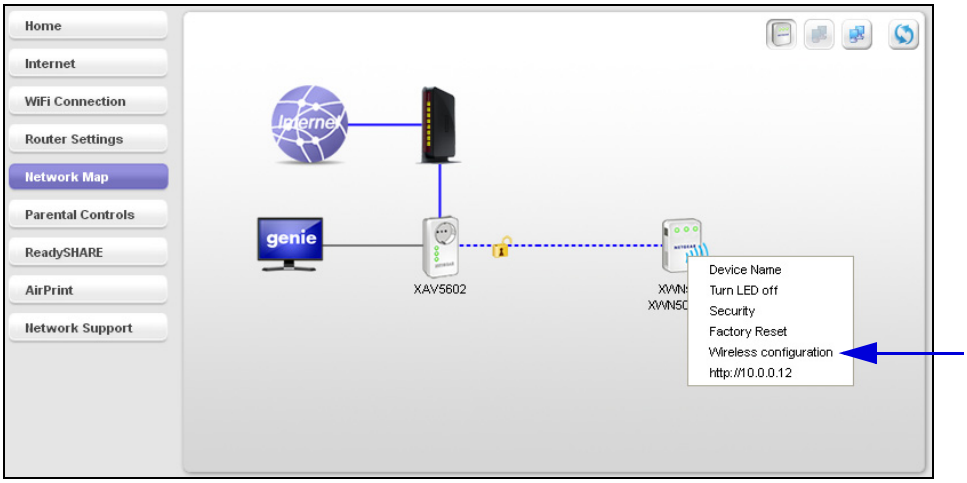
5. Set the encryption key for the device (see *Set the Powerline Encryption Key* on page 25). Make sure that you enter the same encryption key that your other Powerline devices are using.
6. Verify that the devices in the Powerline network are in the device list by clicking the **Refresh** icon. It might take a minute or two to detect all devices in the network.

Wireless Settings

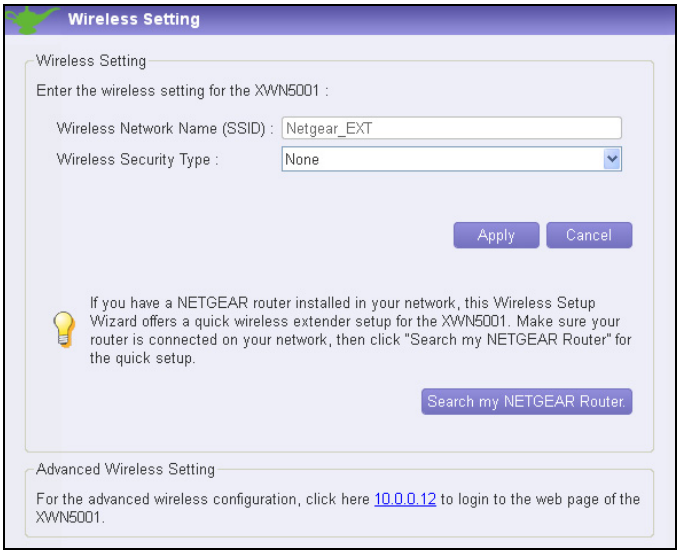
You can use NETGEAR genie to view the current wireless settings, or to change them.

➢ **To change the wireless settings for your XWN5001 access point:**

1. On the Powerline Utility screen, right-click the XWN5001 icon.
2. From the pop-up menu that displays, select **Wireless configuration**.



The Wireless Setting screen displays:



3. In the Wireless Network Name (SSID) field, enter the network name that you want to use for the access point network (the network broadcast from the XWN5001 access point).
4. Select a setting from the Wireless Security Type drop-down list.
5. Enter a password (network key).
6. Click **Apply** to save your changes.

➢ **To search for your NETGEAR router:**

1. On the Wireless Setting screen, click the **Search my NETGEAR Router** button.

   The access point detects and displays the wireless settings that your router or gateway uses.

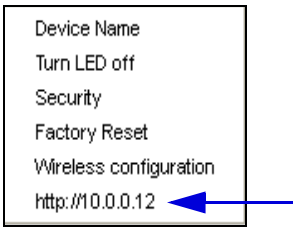
2. If you want your access point to use the same wireless settings as your router or gateway, scroll down and click **Apply**.

Access NETGEAR Web genie

From the NETGEAR genie Powerline Utility screen, you can manage basic settings on your Powerline devices. To configure more advanced settings on individual Powerline devices, use NETGEAR web genie.

➢ **To access the web genie for an individual Powerline device:**

1. Launch NETGEAR genie from the computer that is connected to your Powerline network.
2. On the Powerline Utility screen, and right-click the device.
3. Select the IP address of the device from the menu.



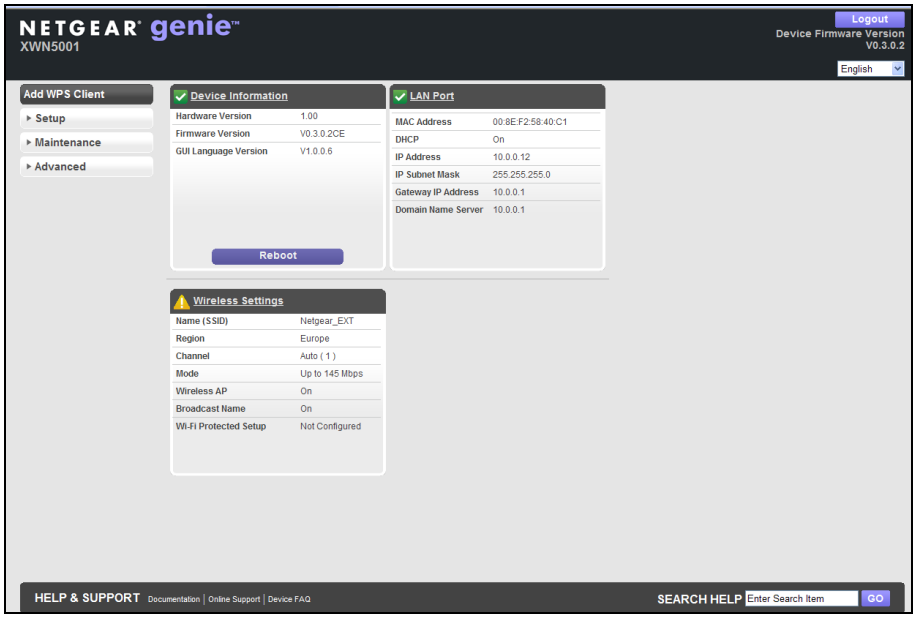
Note: You can also access the web genie by clicking the IP address at the bottom of the Wireless Settings screen.

Your Internet browser launches, and a login window displays:

4. Enter **admin** for the user name and **password** for the password, both in lowercase letters.

Note: The web genie password is different from the device password printed on the product label.
The default web genie user name and password are **admin** and **password**. You can change the default password using the web genie.

The NETGEAR web genie for the device displays in your browser window.



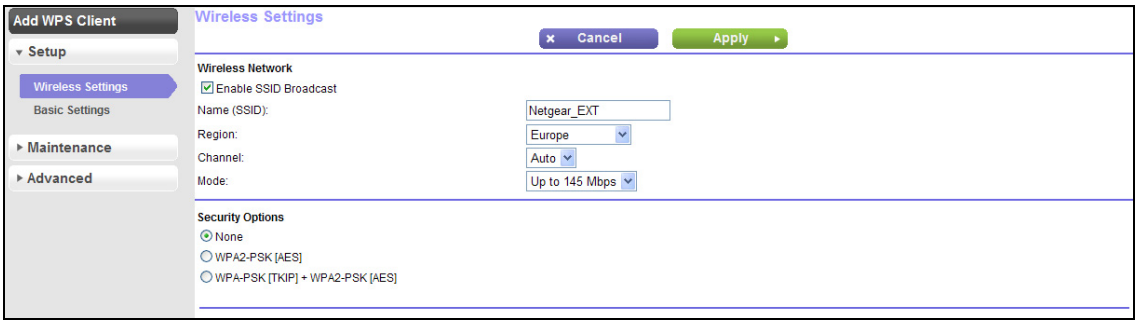
You can use the web genie to reboot the device, configure advanced wireless settings, upgrade your device firmware, and more.

Advanced Wireless Settings

You can use the Wireless Settings screen to change wireless settings including the wireless mode and channel.

➢ **To change the advanced settings for the access point wireless network:**

1. Log in to the NETGEAR web genie for your XWN5001 access point. See *Access NETGEAR Web genie* on page 30.
2. From the menu on the left, select **Setup > Wireless Settings**. The following screen displays:



3. Change the wireless settings for the network broadcast by the access point:
   - **Name (SSID)**. The wireless network name. You can type in a new name to customize your access point network.
   - **Region**. The country or region where the access point is located.
   - **Channel**. The wireless channel for the network.
   - **Mode**. The wireless mode.
4. In the Security Options section of the screen, select the type of wireless security that you want to use on your network.
   - **None**. This is an open wireless network. Any wireless computer or device is allowed to join this network.
   - **WEP**. WEP is an older standard, and is less secure than WPA or WPA2. WEP uses encryption keys and data encryption for data security. You can select 64-bit or 128-bit encryption.
   - **WPA2-PSK [AES]**. WPA2 is even more secure, but some older computers do not support this standard. When using wireless computers or devices that support WPA2, you can enter the passphrase to join the access point's wireless network.
   - **WPA-PSK [TKIP] + WPA2-PSK [AES]**. When using wireless computers or devices that support either WPA or WPA2, you can enter the passphrase to join the access point's wireless network.
5. Click **Apply** to save your changes.

Upgrade the Firmware

You can use NETGEAR web genie to upgrade the firmware on your access point.

➢ **To check for new firmware and update your XWN5001 access point:**

1. Log in to the NETGEAR web genie for your XWN5001 access point. See *Access NETGEAR Web genie* on page 30.
2. From the menu on the left, select **Maintenance > Firmware Upgrade**.

   The following screen displays:

3. Click the **Check** button.

   If new firmware is available, the access point finds it.
4. Click **Yes** to update and locate the firmware you downloaded (the file ends in .img).

WARNING!

When uploading firmware to the access point, *do not* interrupt the web browser by closing the window, clicking a link, or loading a new page. If the browser is interrupted, it could corrupt the firmware.

When the upload is complete, your access point restarts. The upgrade process typically takes about 1 minute. Read the firmware release notes to determine whether you need to reconfigure the access point after upgrading.

Troubleshooting

3

This chapter provides information to help you diagnose and solve problems you might encounter. If you do not find the solution here, check the NETGEAR support site at *http://support.netgear.com* for product and contact information.

This chapter includes:

- *Basic Functioning*
- *Troubleshooting Tips*
- *If You Do Not See All Your Devices with the NETGEAR genie*
- *If You Do Not See the Powerline Icon on Your Network Map*

Basic Functioning

After you plug in the Powerline device, the following sequence of events should occur:

1. The Power LED lights.
2. After approximately 10 seconds, verify the following:
   - The Power LED is solid green. The device is powered on.
   - If the device is connected to a Powerline network, the Powerline LED is lit.
   - If an Ethernet cable is plugged into the device, the Ethernet LED is lit.

Troubleshooting Tips

The Factory Reset and Security buttons are on the side panel of the Powerline device.

- Pressing the Factory Reset button longer than 2 seconds does not reset the device.
- Pressing the Security button longer than 2 seconds does not activate security.

LEDs

The LEDs indicate activity and can be used for troubleshooting.

LEDs Are Off When the Powerline Device Is Plugged In

- First check to make sure that the electrical outlet has power.
- If power is supplied and the LEDs stay off, someone might have used NETGEAR genie to turn off the LEDs. Use NETGEAR genie to see if the LEDs are turned off. If they are, then use the genie to turn them back on.

Power LED

- **Off**. There is no electrical power.
  - Make sure that power is supplied to the electrical outlet, and the Powerline device is not plugged into an extension cord, power strip, or surge protector.
  - Press the **Factory Reset** button on each Powerline device for 1 second to return the devices to their factory default settings.
- **Amber**. Power saving mode occurs when the Ethernet LED is off. The Ethernet LED turns off when:
  - The Ethernet cable is unplugged.
  - The device connected through the Ethernet cable is turned off.
  - The device is idle for 10 minutes.

  The Powerline device returns to normal mode within 2 seconds once the Ethernet link is active.

Powerline LED

- **Off**. The Powerline devices cannot find each other. Make sure that the Powerline devices are plugged into outlets with power, and that they use the same network encryption key.
  - Move the Powerline device to a location closer to the computer or devices.
  - If you have set up network security, make sure that all Powerline devices are using the same encryption key.
  - If the problem occurred after you changed the network encryption key, reset each device to its factory default settings. Then you can customize the encryption key.
- **Amber or red**. Move the Powerline device to another electrical outlet with a faster connection.

Wireless LED Is Off

If the Wireless LED stays off, use NETGEAR web genie to turn on the wireless radio. See *Advanced Wireless Settings* on page 32. The Wireless LED is lit when the wireless radio is turned on.

Ethernet LED Is Off

There is no Ethernet connection.

- Make sure that:
  - Your router and modem are turned on.
  - The Powerline device's cable is securely connected to a router LAN port.
  - The computer connected directly to the router can access the Internet.
- Press the **Factory Reset** button on each Powerline device for 1 second to return the device to its factory default settings.

If You Do Not See All Your Devices with the NETGEAR genie

If you click the Refresh icon on the NETGEAR genie Powerline Utility screen and do not see all the devices you expect, some Powerline devices might be using a different encryption key. If the encryption keys are different, do one of the following:

- Reset your Powerline devices to their factory settings and default encryption key. Then set the encryption for all of your Powerline devices.
- Connect your computer to each Powerline device, and set up the network encryption key for one device at a time.

If You Do Not See the Powerline Icon on Your Network Map

If you navigate to the Network Map on NETGEAR genie and do not see the Powerline icon, it could be that your computer's antivirus software is blocking the Powerline communication protocol. Temporarily disable your antivirus software and relaunch NETGEAR genie.

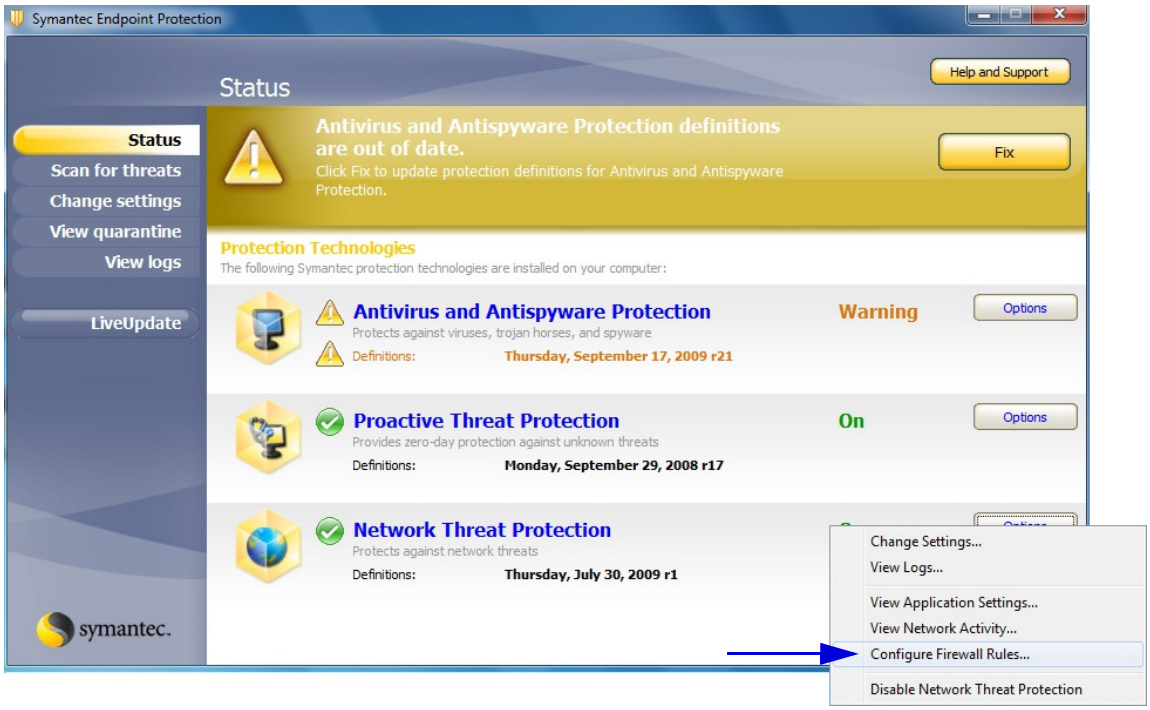
Symantec Endpoint Protection

The antivirus software Symantec Endpoint Protection v11.0.5002.333 filters the NETGEAR Powerline Utility network traffic and prevents Powerline devices from appearing on the Network Map. To allow Powerline Utility network traffic to pass through the Symantec Endpoint Protection filter, you must add a firewall rule to the filter.

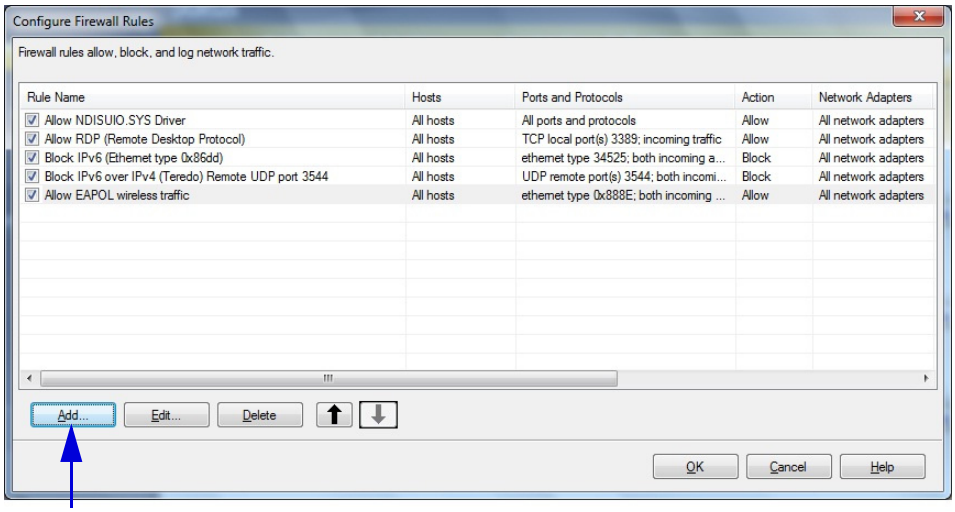
Note: Symantec Endpoint Protection v12.0.1001.95 does not have this issue.

➢ **To add a firewall rule for your Powerline devices:**

1. Open the Symantec Control Center, and click the **Options** button under Network Threat Protection.
2. Select **Configure Firewall Rules** from the menu.

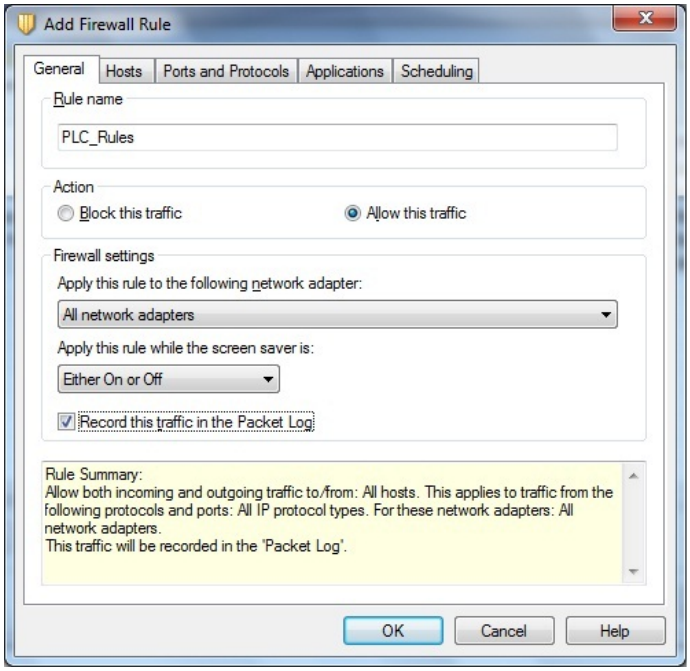


The following screen displays:



3. Click **Add** to add a firewall rule.

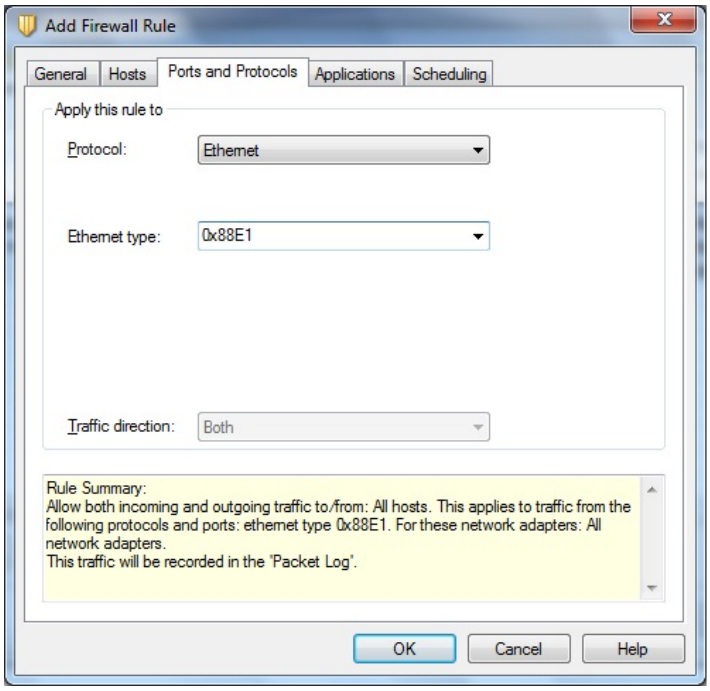
   The following screen displays:



4. In the **General** tab, do the following:
   a. Type a name for the firewall rule in the Rule name field.
   b. Select the **Allow this traffic** radio button.
   c. Configure the firewall settings as shown or as you prefer.

5. Click the **Ports and Protocols** tab.

   The following screen displays:

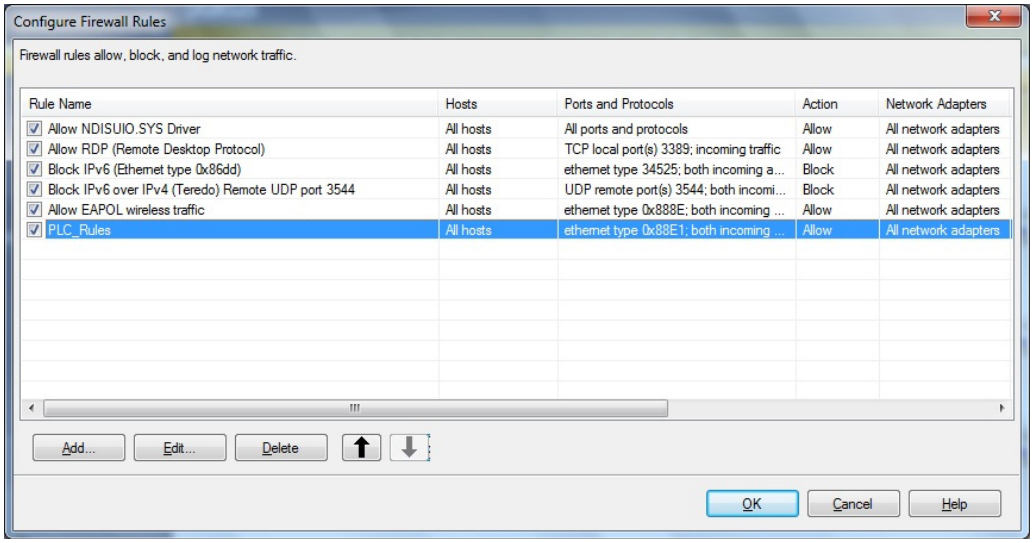


   a. From the Protocol drop-down menu, select **Ethernet**.

   b. In the Ethernet type field, type **0x88E1**.

   c. Click **OK** to create the firewall rule for your Powerline devices.

   The rule appears in the firewall rule list.



6. Make sure that the check box next to the rule is selected, and click **OK**.

7. Restart the computer and launch NETGEAR genie. The Powerline icon should now display on the Network Map screen.

Supplemental Information

This appendix provides technical specifications and safety information for the Powerline 500 WiFi Access Point (XWN5001).

This appendix includes the following sections:

- *Technical Specifications*
- *Safety Information*

Technical Specifications

Feature		Specification
Data and routing protocols		IEEE 802.3 (10BASE-T), IEEE 802.3u (100BASE-Tx)
AC input		100–240V, 0.2A (max.)
Power consumption		Normal: 4W, Power saving mode: 3W
Dimensions		112 x 74 x 45 mm (4.41 x 2.91 x 1.77 in.)
Weight		0.245 kg (0.54 lb)
Socket ratings		EU: 15A 250V NA: 14A 125V UK: 12A 250V
Operating temperature		0° to 40°C (32º to 104ºF)
Operating humidity		10–90% maximum relative humidity, noncondensing
Storage humidity		5–95% maximum relative humidity, noncondensing
Security encryption type		128-bit AES
MAC addresses		64: number of nodes that can be added to a single network
Bandwidth		200 Mbps
Compatibility		Not HomePlug v1.0 or HomePlug v1.0 Turbo compatible
Data transfer rate		Up to 200 Mbps with real throughput greater than 80 Mbps
Frequency band		2–30 Mbps
Modulation type		OFDM symbol modulation
Electromagnetic emissions		FCC Part 15 Class B; CE-EMC Class B; 3-home FCC Certificate
Safety agency approvals		UL Listed (UL 1950) /cUL IEC950; CE LVD; TUV CB, TUV CG
Wireless	Wireless communication	Enabled
	Wireless Network Name (SSID)	
	Security	
	Transmission speed	Auto[a]
	Country/Region	United States (varies by region)
	Operating mode	802.11n, 802.11g, 802.11b
	Data rate	Up to 300 Mbps

a. Maximum wireless signal rate (IEEE Standard 802.11). Actual throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

Safety Information

Follow these safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

- AC input: 100–240V, 0.2A (max.)
- Operating temperature: 0C–40 degrees C.
- Maximum wireless signal rate derived from IEEE Standard 802.11 specifications.
- Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.
- Do not service any product except as explained in your system documentation.
- Opening or removing covers that are marked with the triangular symbol with a lightning bolt can expose you to electrical shock. Only a trained service technician should service components inside these compartments.
- Use the product only with approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- To help avoid damaging your system, be sure that the voltage selection switch (if provided) on the power supply is set to match the power available at your location:
  - 110 volts (V), 60 hertz (Hz) in most of North and South America and some Far Eastern countries such as South Korea and Taiwan.
  - 100V, 50 Hz in eastern Japan and 100V, 60 Hz in western Japan.
  - 230V, 50 Hz in most of Europe, the Middle East, and the Far East.
- The peripheral power cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- For additional safety instructions, see *Appendix B, Notification of Compliance*.

Notification of Compliance

B

NETGEAR Powerline Products

Safety Instructions and Precautions

WARNING!

Use the following safety guidelines to ensure your own personal safety and to help protect your product from potential damage. To reduce the risk of bodily injury, electrical shock, fire, and damage to the equipment, observe the following precautions.

- The socket-outlet shall be installed near the equipment and shall be easily accessible
- Observe and follow service markings.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your service provider/retailer:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Operate the product only from the type of external power source indicated on the electrical ratings label.
- Also, be sure that attached devices are electrically rated to operate with the power available in your location.
- Use only approved power cables. If you have not been provided with a power cable for your system or for any AC powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label.

The voltage and current rating of the cable should be greater than the ratings marked on the product.

- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets.
- Do not use adapter plugs. If you must use an extension cable, use a three-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating f all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power cables or plugs.
- Always follow your local and national wiring rules.

Regulatory Compliance Information

FCC Requirements for Operation in the United States

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Declaration Of Conformity

We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134, declare under our sole responsibility that the Powerline 500 Access Point (XWN5001) complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warnings & Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following methods:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.

- Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications made to the product, unless expressly approved by NETGEAR, Inc., could void the user's right to operate the equipment.

European Union

The Powerline 500 WiFi Access Point (XWN5001) complies with essential requirements of EU EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC as supported by applying the following test methods and standards:

- EN55022: 2006 / A1: 2007
- EN55024: 1998 / A1: 2001 / A2 : 2003
- EN60950-1: 2006 2nd Edition
- EN 61000-3-2:2006
- EN 61000-3-3:1995 w/A1: 2001+A2: 2005

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Powerline 500 WiFi Access Point (XWN5001)) does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

This Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada

Industry Canada

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Caution:

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

GPL License Agreement

GPL may be included in this product; to view the GPL license agreement, go to *ftp://downloads.netgear.com/files/GPLnotice.pdf*.

For GNU General Public License (GPL) related information, please visit *http://support.netgear.com/app/answers/detail/a_id/2649*.

Index

A

AC Input 41
adding
  firewall rule 37
  Powerline device to network 11, 28
advanced wireless settings 32

B

bandwidth 41
basic functioning 35
buttons
  described 7
  troubleshooting 35

C

changing names of Powerline devices 24
compatibility 41
compliance 43
configuring wireless settings 29, 32

D

data transfer rate 41
default encryption key 17
default factory settings 27
dimensions 41

E

electromagnetic emissions 41
encryption keys
  default and private 17
  setting 25
Ethernet LED
  described 7
  troubleshooting 36
Ethernet port 8

F

Factory Reset button
  described 7
  troubleshooting 35
firewall rule, adding 37
firmware, upgrading 33
frequency band 41

G

genie, NETGEAR 20
genie, web 30

H

hardware 6
humidity, operating and storage 41

I

icons
  Powerline utility 22
  WPS 15

L

label 8
LEDs
  descriptions 7
  troubleshooting 35
  turning on and off 25
link rate 23

M

MAC addresses
  product label 8
  specification 41
mode, wireless 32
model number 8
modulation type 41

N

name, changing for Powerline devices 24
NETGEAR genie 20
NETGEAR web genie 30

network key, default 8
networks
  Powerline 8
  wireless 12

O

On/Off switch 7

P

package contents 6
password
  device 8
  NETGEAR web genie 30
Pick A Plug feature 7
power consumption 41
Power LED
  described 7
  troubleshooting 35
Powerline LED
  described 7
  troubleshooting 36
Powerline networks 8
  described 8
  setting up 10
Powerline Utility 21
private encryption key 17
product label 8

R

reset button 7
resetting to factory settings 27
router, search for using NETGEAR genie 30

S

safety agency approvals 41
safety information 42
security
  Powerline encryption 16
  wireless 32
Security button 17
  described 7
  troubleshooting 35
security encryption types 41
security PIN, WPS 8
serial number 8
socket ratings 41
SSID 8, 32

T

technical specifications 40, 41
technical support 2
temperature, operating 41
trademarks 2
troubleshooting 34
  LEDs 35
  NETGEAR genie 36
  Powerline icon 37
  Symantec firewall 37

U

upgrading firmware 33

W

web genie 30
weight 41
Wi-Fi Protected Setup (WPS) 15
Wireless LED
  described 7
  troubleshooting 36
wireless mode 32
wireless network name (SSID) 8, 32
wireless networks
  joining 16
  setting up 12
wireless security 32
wireless settings 29, 32
wireless specifications 41
WPS security PIN 8